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# LAND USE
# and
# RESOURCE DEVELOPMENT
# in the
# EASTERN SLOPES

## OLDMAN RIVER DRAINAGE BASIN

REPORT BY OLDMAN RIVER
REGIONAL PLANNING COMMISSION

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# LAND USE and RESOURCE DEVELOPMENT

# in the

# EASTERN SLOPES

## THE OLDMAN RIVER DRAINAGE BASIN

A report prepared by the staff of the Oldman River Regional Planning
Commission for the: ENVIRONMENT CONSERVATION AUTHORITY.
9912 - 107th. Street, Edmonton, Alberta, T5K 1G5.

MARCH, 1973.

The Environment Conservation Authority presents this publication as background information for its upcoming public hearings.

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Cover photo: Courtesy Vern Decoux, Blairmore.

# INTRODUCTION

The Government of Alberta has invited submissions to a series of public hearings conducted by the Environment Conservation Authority on, "Land Use and Resource Development in the Eastern Slopes."

This planning report is one of a number of public information papers being distributed prior to the hearings. It describes the most southerly of five study areas corresponding to the mountain and foothills portions of the province's five major river basins. The study area is the one within which the headwaters of the Oldman River and its tributaries rise, (see Maps 1 to 5).

In spite of the historical pattern of development in this part of the Eastern Slopes, a number of alternative strategies for future land use can be conceived. Since it is beyond its terms of reference to propose specific strategies, the report is presented as a discussion paper which first outlines the area's natural characteristics and resource capabilities, then indicates existing land uses and the major issues that could influence future development decisions. A subregion with unique potential, the Alberta side of the Crowsnest Pass, is discussed separately. The report continues with a brief examination of how land uses are regulated and administered, the role planning plays, the urgency of formulating a comprehensive development policy, and concludes with a bibliography of further source material.

## Defining the Study Area

The study area, outlined on the accompanying maps, lies in the southwestern corner of the province and consists of that portion of the Oldman River drainage basin lying within the foothills and mountains. Its boundaries are defined by the 49th parallel on the south; the Alberta/British Columbia border on the west and the height of land dividing the Highwood and Livingstone River watersheds on the north. The easterly boundary is somewhat arbitrary; most of it lies slightly east of where the characteristic foothills vegetation begins, and at some points, as much as thirty miles east of the edge of the true foothills. While either of the above criteria or existing administrative boundaries could have been employed, the line was selected primarily to delineate the area within which pressures for development and resulting land use conflicts were judged most likely to occur.

## The Natural Environment of the Study Area.

The study area contains a variety of landforms and vegetation. Its western border coincides with the continental divide and paralleling it to the east are a series of the high, rugged mountain ranges which characterize the Rocky Mountains. Above the treeline, there are large alpine barrens capped by several peaks rising over 9,000 feet (see Map No. 5), while between the ranges, long, narrow valleys are found. As one proceeds east, the mountains give way to foothills, and these in turn soon merge into "aspen parkland" - the geographer's term for the sort of rolling, semi-wooded terrain that extends to the edge of the true prairie just west of Lethbridge. In some places the transition from mountains to foothills to prairies is remarkably abrupt.

The region's rivers and streams, which over the years have helped carve dramatic coulees across the landscape, are themselves relatively small. There are few lakes and, with the exception of Waterton Lakes, these tend to be dwarfed by man-made reservoirs constructed for irrigation projects.

In the mountains, the vegetation is predominantly coniferous forest, with sizeable areas of deciduous trees and natural grassland occuring in the valleys. Vegetation in the remainder of the study area tends to be influenced by local variations in soil, climate, ground water and elevation. Grasslands predominate, but where adequate water is available, willow and various poplars flourish, while lodgepole pine and other evergreens cover many parts of the foothills. In some areas, these may be succeeded by a climax forest growth.

The resulting environment is particularly favourable to ungulates such as elk, moose and deer. Mountain goat, bighorn sheep, grizzly bear, black bear, coyote, beaver and other aquatic mammals are also found. Rainbow and cutthroat trout are the most common sport fish. Upland game birds, particularly grouse, are widespread through the foothills. Isolated waterfowl habitats occur, but the area is not along any of the major migratory routes.

## The Eastern Slopes as a Watershed

The role of the study area as a watershed is critical and cannot be ignored in any discussion of future development strategies. The mountains and foothills form an immense natural reservoir, not only for the remainder of the Oldman River Basin, but for lands throughout the South Saskatchewan River Basin. Almost 90% of the precipitation in this region falls on the Eastern Slopes: the remainder of the

Oldman River drainage area has a relatively low annual precipitation, ranging from 20 inches at the eastern border of the study area, to 14 inches near the confluence of the Bow and Oldman Rivers. The Rocky Mountains Forest Reserve, the Eastern Rockies Conservation Board, various irrigation authorities, and the South Saskatchewan River Basin Study, were all initiated wholly or partly in response to the need to conserve water.

## THE RESOURCE CAPABILITIES OF THE EASTERN SLOPES

### What is a Resource?

Resources can be categorized in a number of ways. They could, for example, be described as natural resources, economic resources, human resources or cultural resources. Traditionally, there has been a tendency to identify the so-called natural resources with such tangibles as land, oil, gas, minerals and timber. Today, any part of the environment society perceives as having value becomes a resource. In the present context, this might include, in addition to the foregoing, a prime recreational area; a scenic drive; a congenial climate; a unique ecosystem or geological formation; an archaeological or historical site; a key wintering area for ungulates; or a spawning stream for game fish.

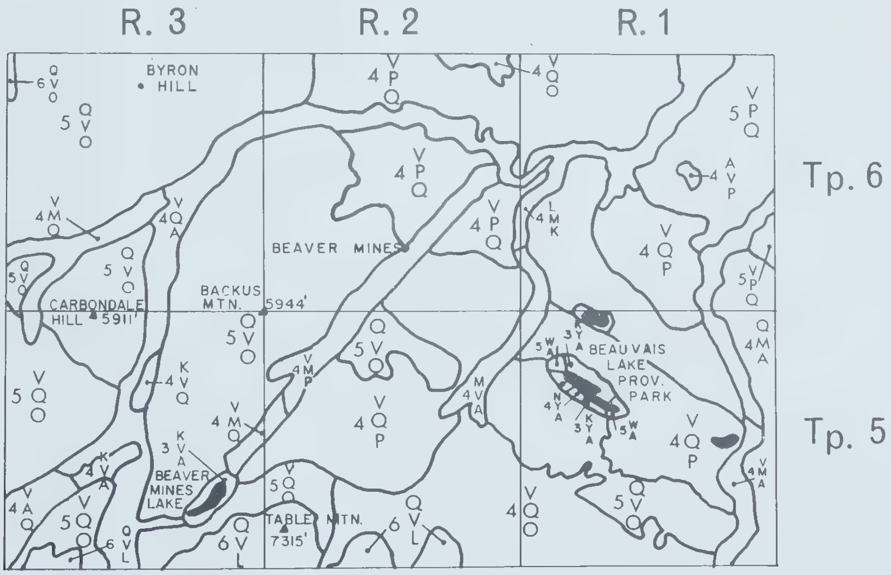
### The Resource Capability Maps.

Examples of all the resources listed above are known to exist in the study area. To facilitate presentation and comparison, these resources are grouped into four categories and recorded on the set of capability maps included here.

The categories are:

1. Capability for non-renewable resources, including extraction of natural gas and minerals.
2. Capability for renewable resources, including forestry and agriculture.
3. Capability for outdoor recreation.
4. Capability for conservation and preservation.

Two major sources employed in preparing the maps were the Canada Land Inventory (C.L.I.) and the "Foothills Resource Allocation Study". The former evaluates resource capabilities under six categories: agriculture, forestry, recreation, sport fish, ungulates, and waterfowl, but makes no attempt to suggest preferred land uses. The perceived capability for a particular use ranges from Class 1 (excellent) to Class 7 (very poor).



The numbers on this excerpt from a C.L.I. map indicate relative capability for recreation, with Class 3 being the highest. The letter code indicates specific recreational features, (e.g. shoreland, scenic views, etc.)

The "Foothills Resource Allocation Study", covering the whole Rocky Mountains Forest Reserve, employed the same criteria and mapping routines as the C.L.I. project, but also inventoried other capabilities such as oil, gas and mineral resources, then employed a sophisticated system of "weighting" various capabilities to determine the preferred resource in a given area. On the maps in this report, it was a primary data source for lands within the Forest Reserve and the Crowsnest Pass, while C.L.I. maps, provincial government sources, and Planning Commission records were employed throughout the study area.

The resource capabilities on the maps are on a relative rather than an absolute scale of values. The terms "moderate" and "high" are used within the context of the area's overall resources. For example, on the scale of seven employed by the Canada Land Inventory, there are no Class 1 recreational sites in the study area, therefore Class 2 and 3 recreational sites rate a "high" capability and Class 4 and 5 sites a "moderate" capability. Land with a "high" capability for grazing is actually Class 4 or 5 agricultural land. Further details are given in the discussion of each map.

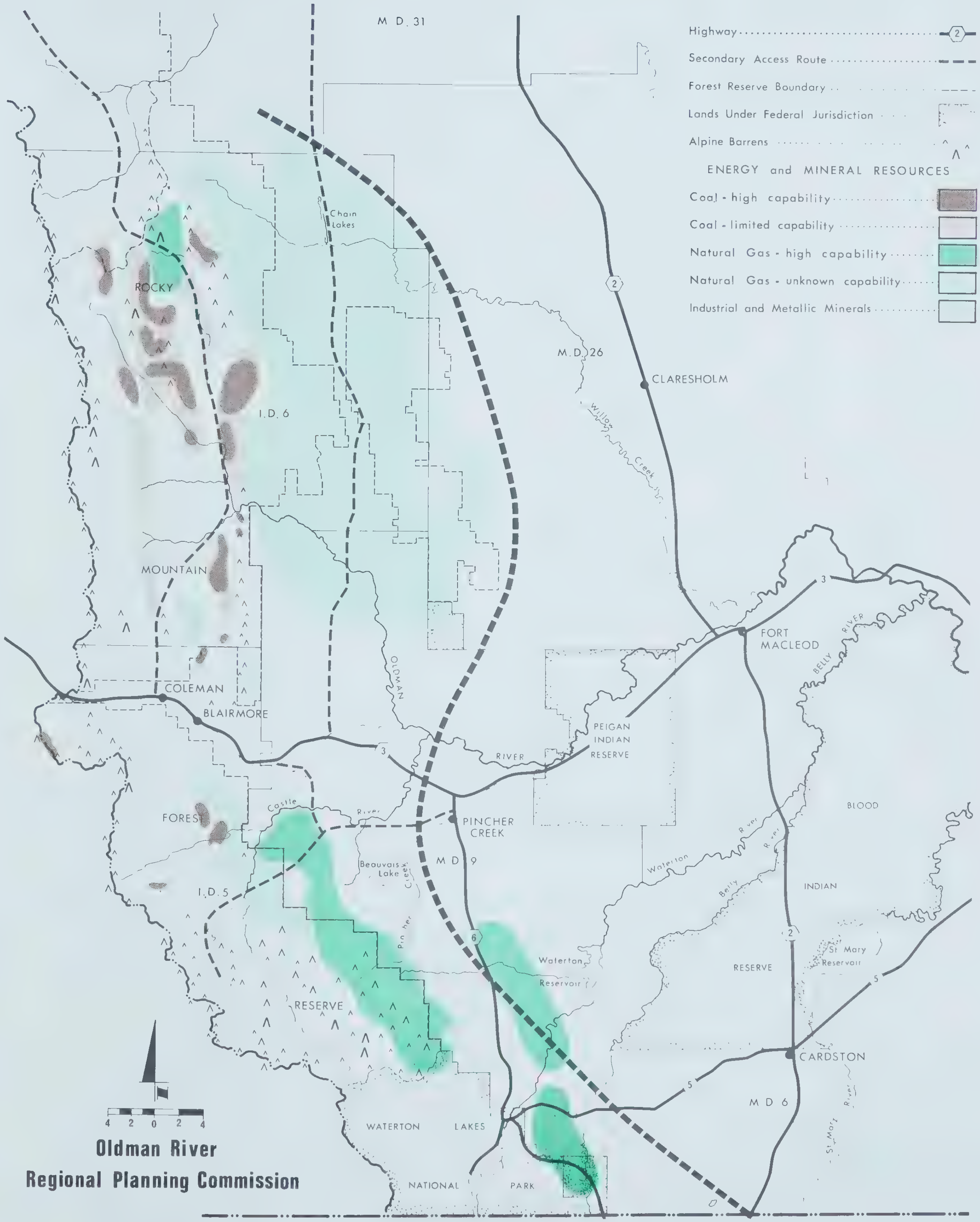
Non-Renewable Resource Capabilities.

The predominant non-renewable resources in the study area are coal and natural gas. There is also an active limestone quarry, numerous gravel deposits and some low-grade iron and copper deposits.

The proven coal deposits north of the Crowsnest Pass are quite extensive, however coal mining in the mountains faces three major constraints: it must compete in markets where demand fluctuates widely; few deposits are easily

# NON-RENEWABLE RESOURCE CAPABILITIES

## 1



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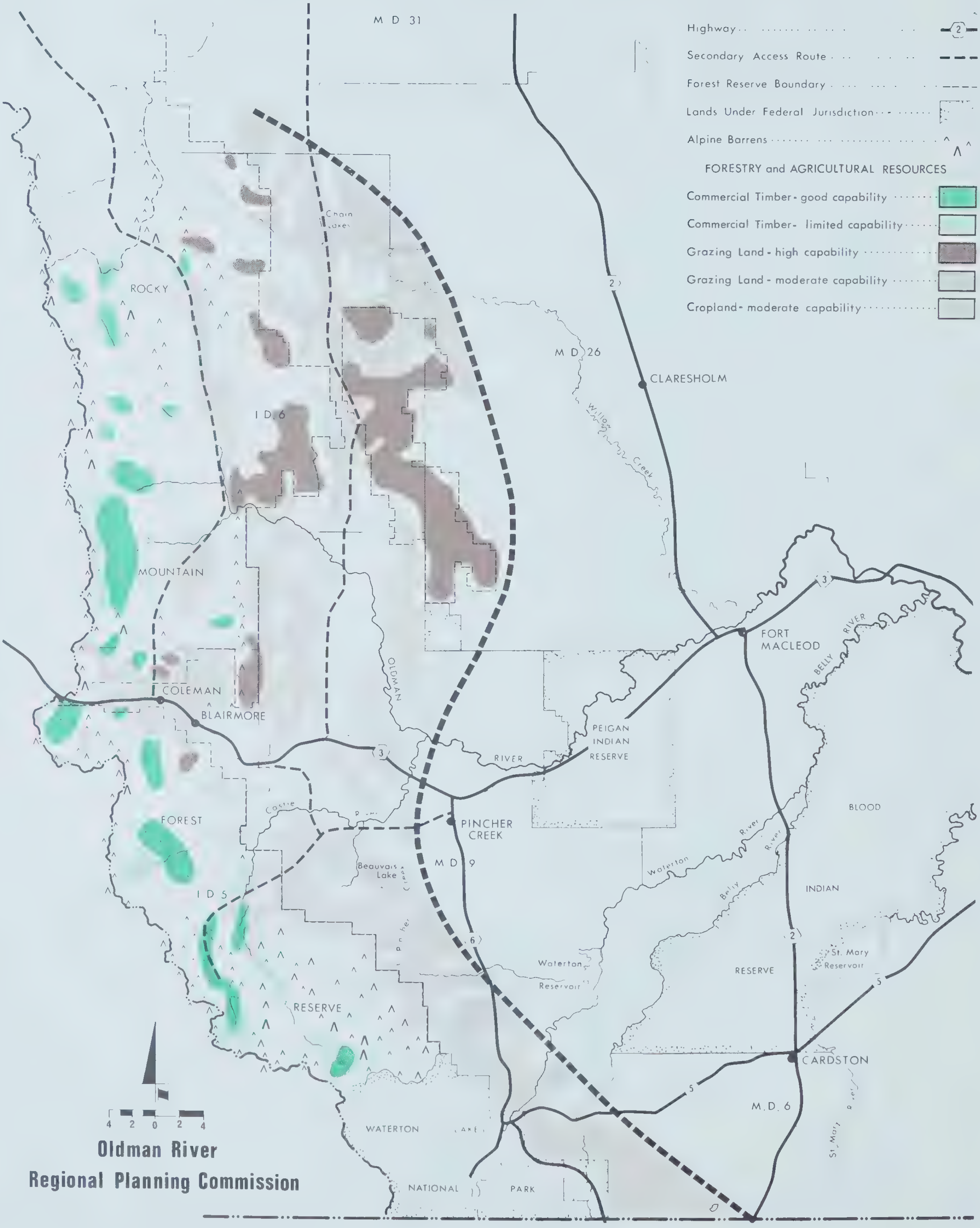
# RENEWABLE RESOURCE CAPABILITIES

2



**Oldman River**
**Regional Planning Commission**

accessible; and, because of tectonic features, or shifting of the earth's crust over geological time periods, coal seams are often badly fractured and steeply inclined. This, in turn, means detailed exploration work is necessary to determine how extensive a given deposit is.

The other important non-renewable resource in the area is natural gas. Like coal, it is essentially an energy resource, and demand is linked to continental and world energy markets. Detailed exploration activities are also a prelude to development. A high capability denotes an existing gas field and moderate capability, zones where geological formations are favorable, but commercial quantities of natural gas have not been confirmed.

## Renewable Resource Capabilities.

Although they might include water as well as all forms of vegetation and and wildlife, renewable resources normally refer to those biotic resources which can be harvested or commercially exploited. In the study area, these consist of timber and natural pasture land. Timber is relatively unimportant from an economic perspective and few stands of commercial timber remain. However, forest cover also stabilizes the soil cover on steep slopes, holds back runoff, thus conserving the region's limited water supply, and provides forage and protective cover for wildlife. The areas depicted on Map 2 do not represent the entire forest cover but only those portions which are either heavily wooded or, because of altitude, soil and precipitation factors, are judged to have a high capability for coniferous growth.

The other major renewable resource is pasture land - much of it privately owned range land, and the remainder Crown land where grazing rights are leased from the province. Most of the latter lies within or adjacent to the forest reserve boundaries. Virtually all lands with a high capability for grazing are fully utilized, most of them for beef cattle, a major component of the regional economy.

## Resource Capabilities for Recreation

Except where development already exists, (e.g. provincial parks), the categories shown provide only a general indication of potential, since capability for many specific recreational activities has not been thoroughly inventoried or assessed, and it is possible some excellent sites remain unrecognized.

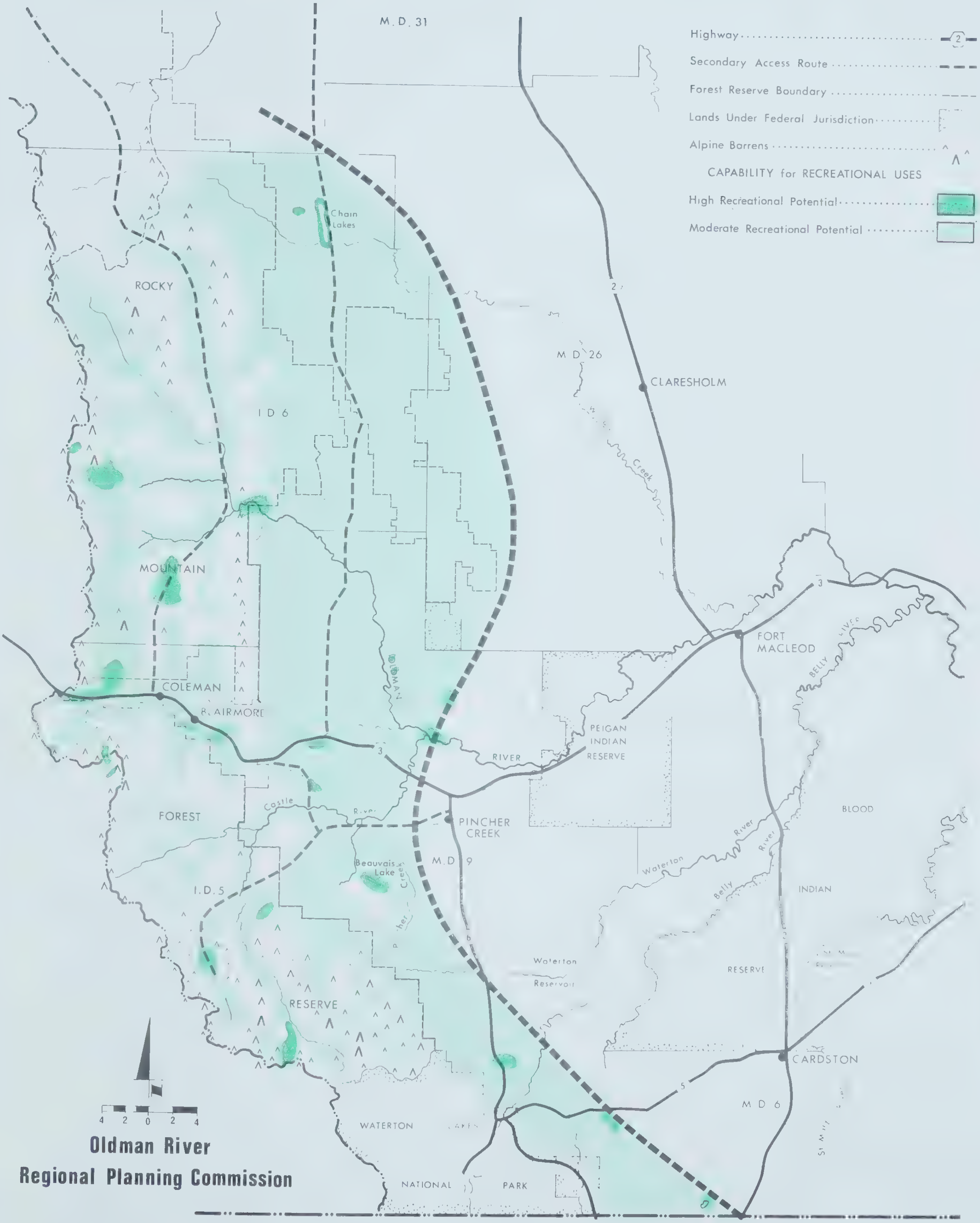
Certain parts of the area with only a moderate rating may be excellent for recreation provided the activities are relatively dispersed. More highly rated sites are those suited to intensive, site-specific uses such as boating and skiing. Unique attractions such as waterfalls, caverns, rock formations, or cultural and historical sites might be considered both preservation and recreation resources. The recreation "activity" in these circumstances, takes the form of visual appreciation.

Another problem is the great variety of outdoor recreational activities, some of them not only incompatible with other resource uses, but with one another. With the exception of skiing, and to lesser extents boating and camping, they are activities which require little or no development per se. Collectively, however, they can have a considerable environmental impact.

Finally, there is a scarcity of lakes or other water bodies suitable for boating, swimming and vacation homes thoughout the Oldman River Region. Since these are among the most popular outdoor activities, it places a premium on

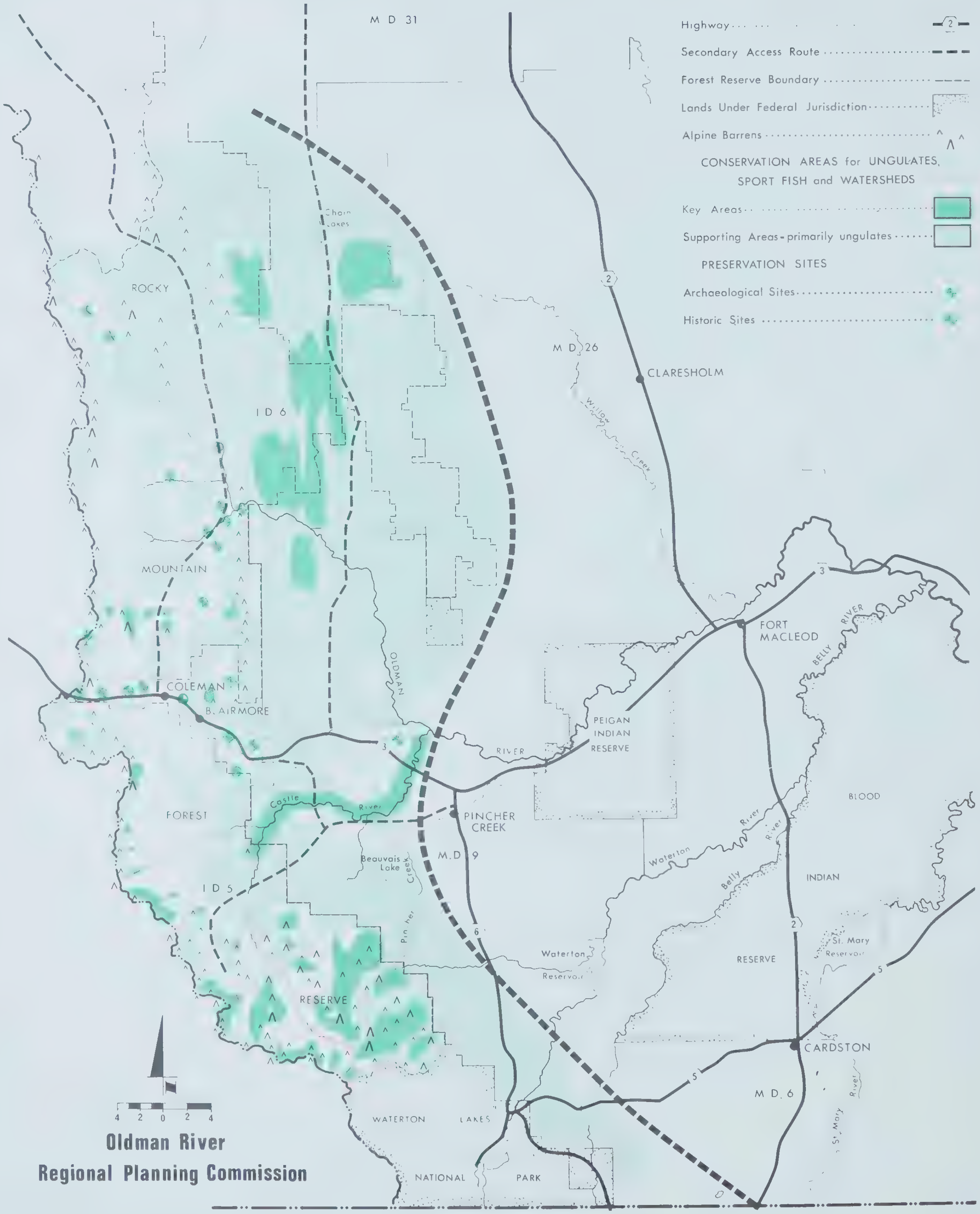
# OUTDOOR RECREATION CAPABILITIES

3



# CONSERVATION and PRESERVATION CAPABILITIES

4



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existing sites and it may be desirable to consider very carefully how existing lakes are developed.

## Capabilities for Preservation and Conservation.

In certain cases, society may decide it is desirable to prohibit development in, or even access to, a given area. While this is the antithesis of traditional resource development philosophy, it is justified on the basis of aesthetic values and sound management of the natural environment. The best known examples are our National Parks.

Preservation recognizes the intrinsic value to society of a unique resource by protecting it from destruction or irreparable damage. Conservation is simply good management practice applied to the natural environment and its biotic resources. In principle, it proposes that if man's activities cannot be segregated from the natural environment then, for both economic and ecological reasons, one or both must be artificially managed.

No comprehensive inventory of the area's historical and archaeological resources has been carried out. Several historically significant buildings and sites still exist, while archaeological sites including cairns, camp grounds, and buffalo jumps are relatively numerous. In the Crowsnest Pass, several clusters of archaeological sites have been located, but only three of the known sites remain relatively intact. Excavations to date suggest the Pass has been occupied by man for at least 8,000 years.

Distinctive ecosystems and natural geological formations, such as caverns, have not been catalogued in detail either, although a number of them are known to wildlife biologists and naturalists. For instance, what is believed to be the largest complex of natural limestone caves in Canada, Gargantua Cavern, lies only a few miles south of the Crowsnest Pass.

Among the area's key conservation resources are wintering ranges for ungulates, fish spawning streams, and certain watersheds where relatively large amounts of precipitation are trapped. Ungulates rely heavily on relatively small, specialized areas for breeding and for winter forage. If these are destroyed or greatly disturbed by development, the consequences for the animals can be disastrous.

Fish spawning streams can be adversely affected by road construction, logging, or dust which drives away the flies the trout feed on. Culverts are another hazard as they prevent fish from reaching their spawning grounds.

Conservation also helps to stabilize natural water supplies. The accompanying table shows the average streamflow as well as the seasonal fluctuations of the Oldman River and its major tributaries. It also reveals that the rivers in the southerly part of the drainage basin capture a far greater proportion of the annual precipitation. Without the key natural watersheds which conserve moisture in the form of groundwater and slowly melting snow or ice, these fluctuations would be even greater, thus aggravating erosion and siltation during spring runoffs and conceivably leading to critical water shortages at other times.. The very high proportion contributed by the mountains and foothills portion of the drainage basin in clearly revealed; the mean total for individual sites — the majority of those in the study area — is 94% of the total streamflow of the Oldman River when it reaches Lethbridge.

Average Streamflow and Variations in the Oldman River Basin.

| | Mean Annual Flow | Minimum Mean Flow | Maximum Mean Flow |
|---|---|---|---|
| Willow Creek near Nolan. | 175 | 81 | 495 |
| Oldman River near Waldron's Corner | 470 | 92 | 1,964 |
| Crowsnest River at Frank. | 170 | 45 | 597 |
| Castle River near Beaver Mines. | 560 | 103 | 2,400 |
| Belly River near Mountain View. | 315 | 67 | 1,103 |
| Waterton River near Standoff. | 880 | 170 | 3,477 |
| St. Mary River near Lethbridge. | 610 | 177 | 2,183 |
| Oldman River near Lethbridge. | 3,390 | 821 | 12,695 |

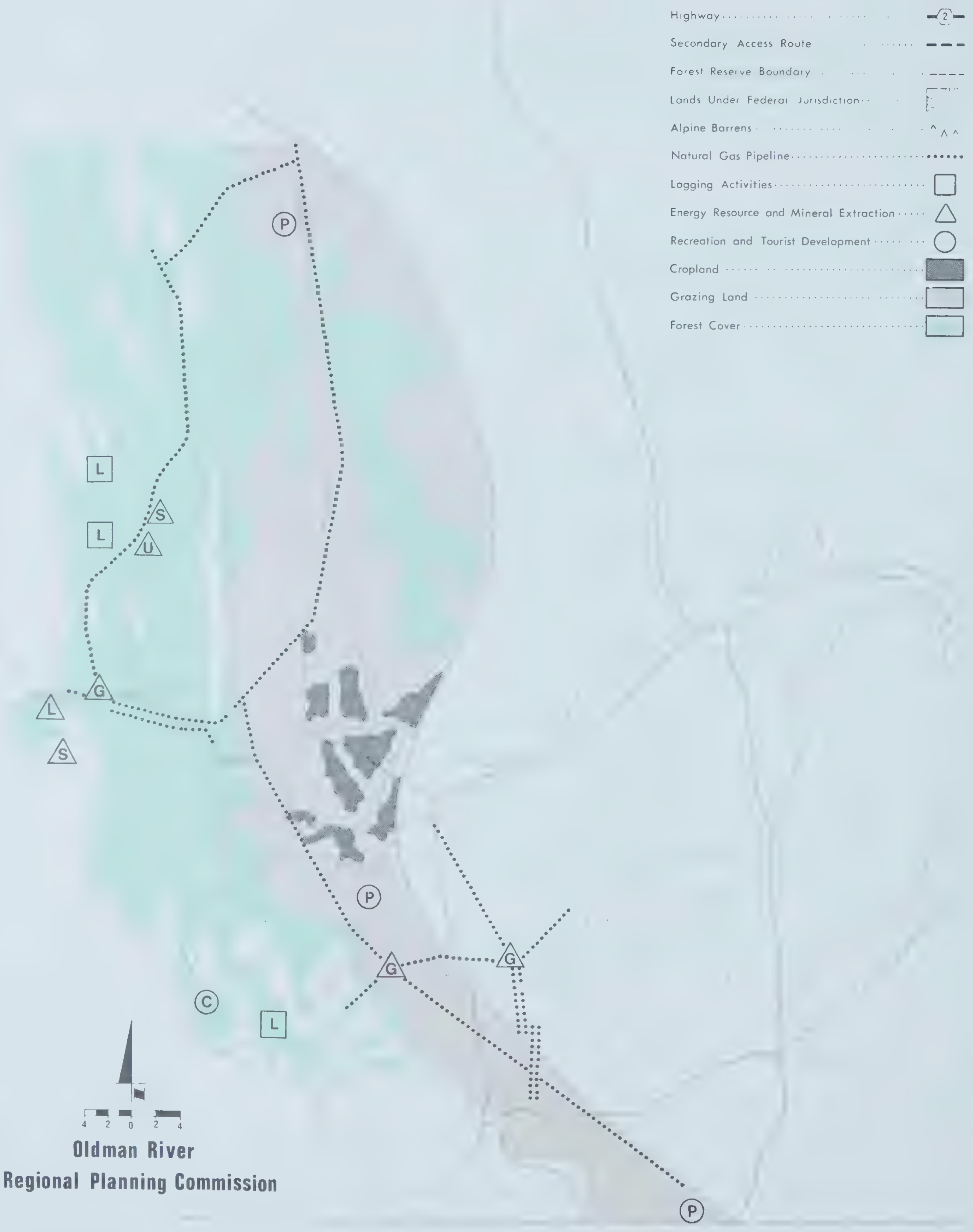
NOTE: All volumes are given in cubic feet per second, (c.f.s.). The minimum and maximum mean flows are on a monthly basis; January usually has the lowest volume and June almost invariably has the highest.

## THE EXISTING LAND USE MAP.

On Map 5, two land use patterns appear to predominate; grazing in the foothills and mountain valleys and, with the exception of small areas of cropland near Highway No. 3, forest covers the remainder. In practice, there are a number of other land uses, both diffuse and localized, which are difficult to represent on a small scale map. They include mining, logging, natural gas extraction and a variety of recreational activities.

With the exception of a limestone quarry west of Crowsnest Lake, and a

# PREDOMINANT EXISTING LAND USE and CHARACTERISTICS 5



Oldman River
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number of small gravel pits, mining is now confined to one underground coal mine at Vicary Creek, (symbol "U" on Map 5). Until 1972, there were also two active strip mines in the area, (symbol "S" on Map 5). Logging activities are limited and it is estimated the supply of accessible commercial timber will be depleted within a decade.

There are three natural gas fields in the study area. Gas from them is piped to two large sulphur extraction plants immediately south of Pincher Creek and a smaller one operating in the Crowsnest Pass. The processed gas then moves directly into major distribution lines, (see Map 5).

Most of the region's outdoor recreational activities tend, by nature, to spread over extensive areas of land. Fishing, hunting, camping, hiking and sightseeing are among this group and many parts of the study area are accessible, particularly by truck or four wheel drive vehicles. In winter, snowmobiling is rapidly gaining in popularity.

The site intensive recreational activities consist primarily of boating and camping in summer and skiing at the West Castle ski resort in winter. Although no tally of annual visitors to the area is practical, some inferences can be made from available data. In 1971, for example, there were over a quarter of a million visitors to the study area's four provincial parks: Beauvais, Chain Lakes; Police Outpost; and Willow Creek.

Most uses described so far are areal land uses, in the sense that some sort of boundary or perimeter can be drawn around the zone of activity. There are also many linear land uses, most notably the construction or maintenance of roads, highways, seismic lines, pipelines and utility right-of-ways. This type of use often affects far more land, directly and indirectly, than do localized areal developments. For instance, seismic exploration to map suspected oil and gas bearing formations requires the detonation of high explosive charges at quarter mile intervals along a grid system which, in turn, may cover a township or more. This means that access lines or "cutlines" may have to be made through existing vegetation every quarter of a mile in the area being explored. The exploration of potential coal deposits can also affect large areas of landscape since test bores or adits may be required at frequent intervals.

Such roads and right-of-ways are at best a mixed blessing. They make previously inaccessible areas available for recreational use, and in some circumstances provide a greatly increased food supply for ungulates. They can also increase runoff, lead to erosion, ruin the appearance of the landscape and leave fewer and fewer options for the preservation of undisturbed wilderness sanctuaries.

## LAND USE CONFLICT AND LAND USE PLANNING.

In an unmolested natural ecosystem, the competition for space among different plant and animal species is regulated by natural contraints. The effect is a continual tendency towards a state of ecological balance or equilibrium. In a human "ecosystem", such as an urban area, comparable competition for space is adjudicated by zoning and other land use regulations. Here also, the ultimate goal is to maintain a state of relative equilibrium. Conflict and compromise are common denominators of both systems.

Much of the study area is nominally wilderness, but in practice, there are very few parts of it that have not been affected to some degree by man's activities.

Under these circumstances, it appears any strategies for future land use and development must contemplate a synthesis of man-made laws and natural laws. Not only must the economic, recreational, cultural and aesthetic demands of present and future generations be considered but also the limited capabilities of the natural environment.

The need for such a synthesis can be inferred from the situation outlined for the study area. When the information on the four resource capability maps is combined, it is readily apparent that many areas share two or more resource capailities, and these capabilities are not always compatible with one another. When this occurs, it becomes obvious that some method of allocating land use priorities is necessary. It is beyond the scope of this paper to suggest what these priorities should be, or on what criteria they might be based, but it is possible to indicate existing and anticipated areas of conflict and outline a conceptual approach to resolving them. The sites of existing or potential land use conflicts in the study area are too complex and too numerous to depict on a small scale map. Instead the accompanying table has been prepared to summarize the more prominent patterns of conflict and compatibility. It can be used as a guide for examining and assessing any given situations or proposals.

The presentation of potential conflicts is bilateral, in the sense that the rating assigned to each possible combination of land uses is based on evaluation of their mutual compatibility. For example, a land use management policy that emphasized sport fish as a resource would hardly have an adverse effect on other land uses but, conversely, most other uses are very detrimental to sport fish. By contrast, a case of mutual conflict is found between grazing and ungulates, as in certain circumstances beef cattle and elk may compete for forage in the same area.

## PROBABILITY OF CONFLICT BETWEEN MAJOR TYPES OF RESOURCE USE

| TYPE OF RESOURCE USE. | Non-renewable | Renewable | Recreational | Preservation and Conservation |
|---|---|---|---|---|
| NON - RENEWABLE | | | | |
| Coal. | Low. | Low. | Moderate. | High. |
| Natural Gas. | Nil. | Low. | Moderate. | High. |
| Other Minerals. | Low. | Low. | Moderate. | High. |
| RENEWABLE. | | | | |
| Timber. | Moderate. | Nil. | Moderate. | High. |
| Grazing. | Nil. | Low. | Moderate. | High. |
| RECREATIONAL. | | | | |
| Site Intensive. | High. | Moderate. | Low. | High. |
| Extensive Area. | Low. | Moderate. | Low. | Moderate. |
| PRESERVATION and CONSERVATION. | | | | |
| Ungulates. | Moderate. | High. | Low. | Nil. |
| Sport Fish. | High. | High. | Moderate. | Nil. |
| Watersheds. | High. | High. | Low. | Nil. |
| Special Sites. | High. | High. | Moderate. | Nil. |
| Historical and Archaeological. | Low. | Low. | Moderate. | Nil. |

Relative Compatibility:

Nil - indicates completely compatible uses.
Low - possibility of conflict under some circumstances.
Moderate - level and frequency of conflict varies.
High - the combination of land uses is highly incompatible.

The table reveals distinctive patterns of compatibility and conflict exist; it also reveals that certain resources, (e.g. watersheds) are actually sensitive to all types of development. Where a high or moderately high capability for two highly incompatible resources is found, it implies that either very rigourous land use management will have to be exercised or utilization of one resource will have to be sacrificed.

The combinations where there is a "moderate" risk of conflict can reflect a tremendous variety of situations. In some instances, co-existance may be feasible; others may have to be treated as high conflict areas. The combinations given a "low" rating could occasionally result in land use conflict; it serves primarily as a warning to would-be developers and decision-makers that the possibility of this type of conflict occurring should be reviewed.

The land use combinations in the study area most likely to result in conflict are readily apparent from the table. Development of non-renewable and renewable resources are highly incompatible with conservation management and moderately incompatible with recreational activities. At the other end of the spectrum, only various conservation and preservation activities can be confidently judged to be inherently compatible with each other. In the other three general categories, some risk exists of different developments within the same category conflicting. This is particularly true of recreation since activities are so diverse and often widespread.

Some combinations have been shown as having a moderate conflict because of peculiar problems associated with them. Recreational uses clash with renewable and non-renewable development not only on aesthetic grounds and the risk of destruction of recreational amenities, but also because recreational users can be a nuisance or even a hazard around this type of development. The most obvious chance of friction is if both groups share the same access roads.

Sport fish, special sites, (i.e. unique ecosystems or geological formations), and historical or archaeological sites are all especially vulnerable where recreational activities are concerned. Ironically, they are also usually considered as recreational assets and, under a different set of assumptions, would fall into that category. Historical and archaeological sites are considered much less vulnerable to resource development activity in the sense that there is a very low probability of the two coinciding. It is recreational users, not developers, who deliberately seek them out and, if the sites are unprotected, may vandalize them.

## Comprehensive Land Use Planning.

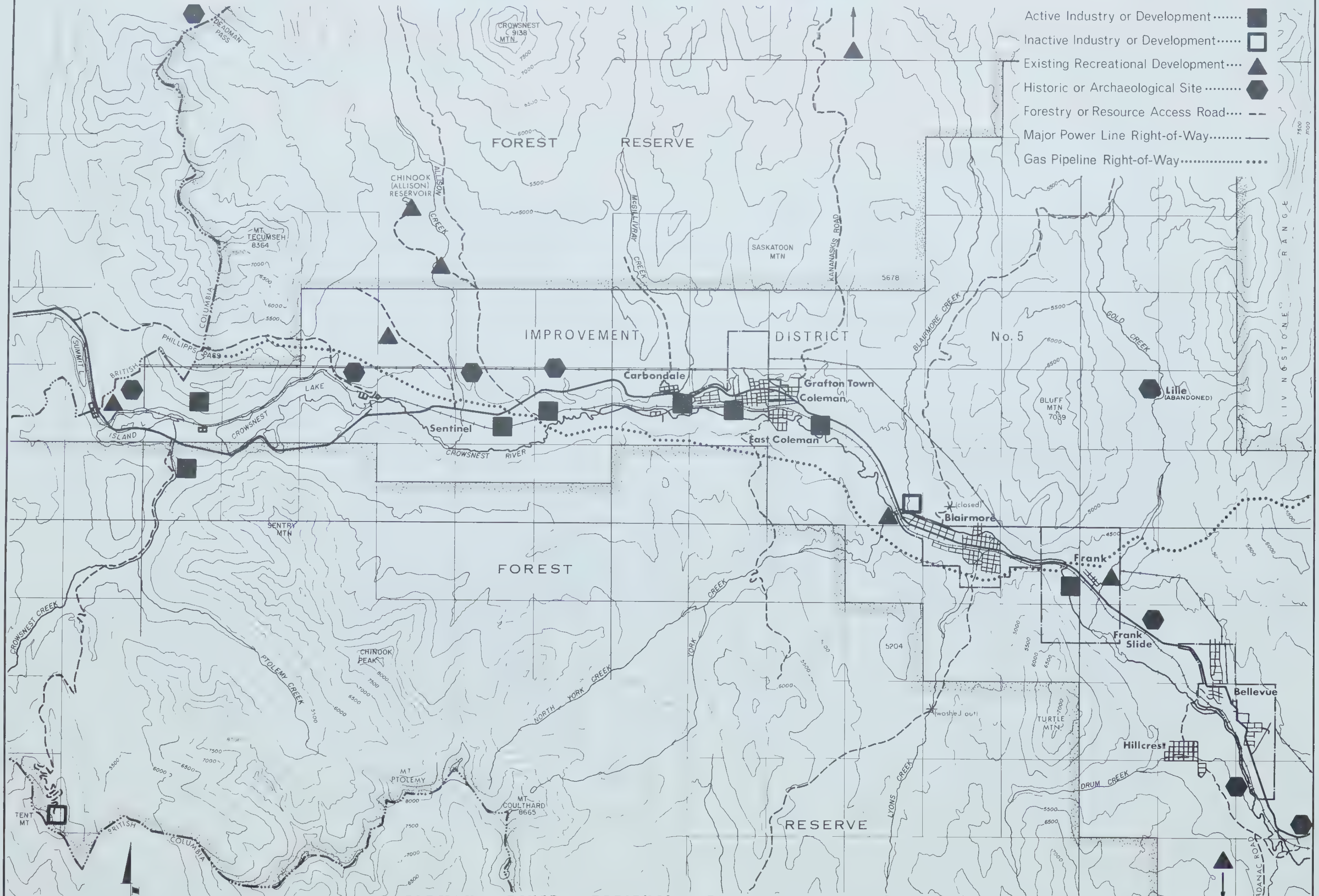
The dimensions of the problem have been outlined; the question remains of how to begin attacking it. As already noted, it is essentially a question of competition for the right to carry out (or prohibit) specified activities on a particular parcel of land. A conflict between resources is an, "interaction in which exploitation of one resource detracts from the quality or potential of another." In an incorporated community, these rights are normally allocated by the municipal administration, although certain responsibilities may be delegated to special agencies, (e.g. water boards, park boards, etc.). If the community has adopted a comprehensive general plan to guide future development, then the decisions of all agencies concerned will be guided by the goals, objectives, and prescribed limitations of the plan.

Although the study area is more complex and there are fewer precedents, it should still be feasible to employ essentially the same planning process that, in an urban area, culminates in a comprehensive general plan. Comprehensive land use planning is simply a means of guiding and defining what is sometimes referred to as multiple land use. It should not be construed as a fixed, static classification of land uses for all time, but a flexible, processual, programmed approach subject to regular revisions in response to changing needs and circumstances.

A comprehensive land use plan for a city or a region - however defined- commences by establishing the general goals and objectives considered desirable; continues with a detailed inventory of the area's assets and liabilities in order that the costs and benefits of alternate strategies can be assessed and then, after those affected by the proposed strategies have had an opportunity to comment, the preferred strategy is selected to become the comprehensive land use plan.

Conceptually, it is possible with existing methodologies to order and analyze most of the variables affecting land use and development in a region such as the Eastern Slopes and, following this, make a rational assessment of the costs and benefits to society associated with various development strategies. At some point the analysis must look beyond the Eastern Slopes themselves and consider their role within a provincial, national and even global context. Other parts of the analysis would consider specific regions and subregions such as the study area being discussed and the Crowsnest Pass subregion, which will be reviewed shortly. The Canada Land Inventory, and more especially the, "Foothills Resource Allocation Study" have already provided much of the data and preliminary analysis that will be needed.

# CROWSNEST PASS SUBREGION



OLDMAN RIVER REGIONAL PLANNING COMMISSION

Although pressures for development are known to exist throughout the Eastern Slopes, there is a particular urgency in the study area because of its strategic location. Bisected by a transcontinental highway and also linked to large population centres north and south of it, the area contains the only sizable, accessible region in the Eastern Slopes not dominated by National Parks, (see Map 7). These circumstances suggest that there is a tremendous potential for tourist and recreational development to relieve the current pressure on these parks and their amenities. On the other hand the ever accelerating, world-wide demand for energy and mineral resources means increasing attention will be paid to the study area's store of non-renewable resources. Unregulated development in response to either type of demand is not likely to be compatible with the conservation and preservation ethic. If these predictions are accepted, then it follows that comprehensive land use planning and the adoption of policies to guide decision-makers at all levels of government, as well as in the private sector, cannot be long postponed.

## THE CROWSNEST PASS: A STUDY IN LAND USE CONFLICT

The Alberta side of the Crowsnest Pass has the greatest concentration of population and development in the whole study area; it also faces the most immediate and most acute land use problems. The latter are primarily the result of its strategic location and the historical pattern of settlement. It is the only major pass across the Rockies in southwestern Alberta and since it does not traverse a national park, it is the only one in the province where land use decisions are outside federal jurisdiction.

### History of the Crowsnest Pass.

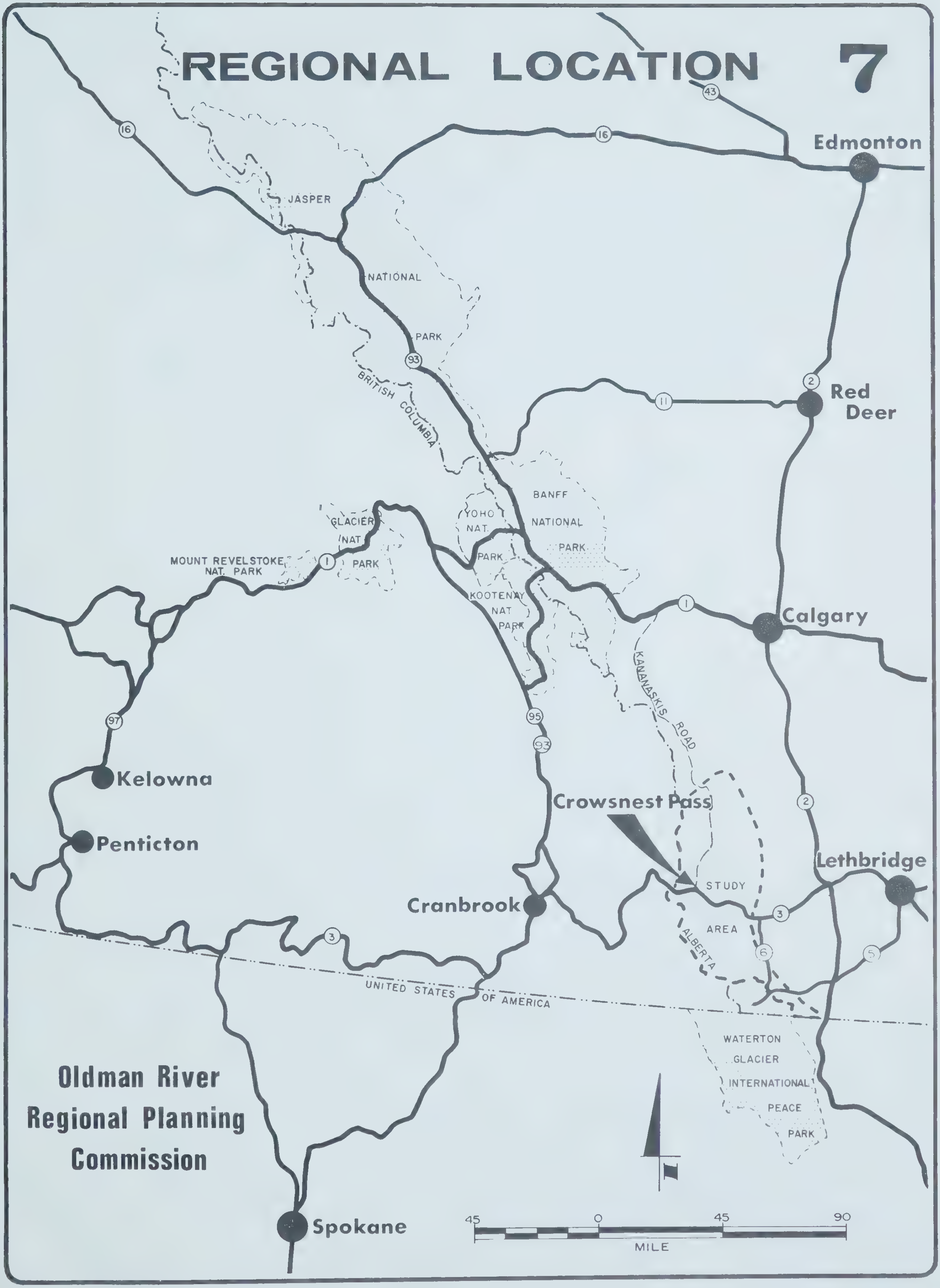
At the turn of the century, the discovery of coal deposits beside the railway in the Pass led to a mining boom and several townsites sprang up close to the mines. Ever since, the economy of the Pass has been linked to the fortunes of the coal industry, and these have been chronically unpredictable. While some new industries have started, attracted by federal grants, the present coal mine is still the major employer.

## Current Land Use and Development Problems.

The amount of accessible, buildable land in the entire Pass (outside of the Forest Reserve boundaries) is probably less than thirty square miles, Not only must townsites and industries be accommodated, but, over the years, the Pass has become a key transportation and utility corridor across the mountains. It contains a railway, a highway, a natural gas pipeline and two major power transmission lines. A new alignment of the Crowsnest Highway (Highway No. 3) as well as another gas pipeline and power transmission line are in the advanced planning stages. If all these existing and proposed utilities were placed side by side, they would occupy a strip of land almost 1,000 feet wide. In practice, they tend to fragment and confine other development, reducing the already limited land use options.

From the perspective of comprehensive land use planning, the situation is complicated by several other factors. There are no less than five local administrations, four of them in incorporated communities and the fifth consisting of the Improvement District administered by the Department of Municipal Affairs. The average distance between communities is less than two miles (see Map 6). Pollution from a coal tipple, coal dust piles and five sawmill burners is pervasive in most parts of the Pass. There is an exceptionally high ratio of older housing and a shortage of suitable rental accommodation. While most residential areas are serviced by modern water and sewer systems, a few are totally inadequate by today's standards.

# REGIONAL LOCATION 7



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Paradoxically, the Pass also possesses some exceptional advantages. Readily accessible by a transcontinental highway, it is located in a beautiful natural setting, noted for its scenic lakes and mountains. There is a long and colourful history; a group of well-established communities; many local points of interest, particularly the Frank Slide; and ready access via the Kananaskis Road and other routes to large areas of the Eastern Slopes with their immense potential for resource and recreational development. Spearheaded by local groups, studies are now underway to find solutions to existing problems and take advantage of the area's capabilities.

## CONCLUSION:

In their diversity and complexity, the problems and opportunities in the Crowsnest Pass represent, in a microcosm, the diversity and complexity involved in comprehensive land use planning for the study area and, by extension, the Eastern Slopes as a whole.

Rather than acting on the basis of adequate data, clearly defined goals and coordinated development programs, the traditional approach to land use decisions, especially in non-urban areas, has been one of reacting to perceived crises, demands and opportunities. Such an ad hoc approach is becoming less and less rational in a complex, rapidly changing society. The Eastern Slopes Hearings permit further exploration of the potential of the former approach by involving the public more directly in the decision-making process. In view of the existing and anticipated pressures for development, they are a crucial step if the resources of the study area are to be utilized in a prudent manner for the ultimate benefit of all users.

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## INTRODUCTION

The resources of Lethbridge's three major libraries as well as those of the Planning Commission library are available to anyone wishing to do research or obtain more detailed information on the Eastern Slopes. Each library tends to have a specialized function and this is reflected in the type of material available.

- The Lethbridge Public Library — mostly books of general interest, but has a special collection on Southern Alberta and its history.

- The Lethbridge Community College library has a great deal of source material on forestry, ecology, the environment and related subjects.

- The University of Lethbridge library subscribes to many specialized technical and scientific journals and carries advanced texts on a number of subjects relevant to the study area.

Readers are also reminded that librarians are trained to find source material on a particular subject area and they can be of invaluable assistance to the researcher. Most titles listed here are available in one or more of these libraries. However, they represent only a sample of the literature available. In contrast to the flood of publications on conservation, recreation and the environment, current material on renewable and non-renewable resources is sparse. Possible sources for the latter subjects include trade journals, the Financial Post (indexed in the Canadian Reader's Guide), the "Applied Science and Technology Index", government publications, and private firms.

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- Biological and Agricultural Index
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- Readers' Guide to Periodical Literature

National Topographic Map Series:
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| 82H | Lethbridge |
| 82I | Gleichen |
| 82J | Kananaskis Lakes |

The C.L.I. map series shows land capabilities for: Forestry, Stream Fish, Recreation, Agriculture, Ungulates and Waterfowl in each area.

NOTE: Large scale capability maps prepared for the "Foothills Resource Allocation Study", as well as large maps of various parts of the study area prepared by the Oldman River Regional Planning Commission are also available for reference or sale at the Commission's offices.

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